

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/34010

A. CLASSIFICATION OF SUBJECT MATTER

IPC: C07H 21/02(2006.01);C07K 14/00(2006.01);C12N 9/00(2006.01)

USPC: 536/23.1;530/350;435/183

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 536/23.1; 530/350; 435/183

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST/WEST, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	Wolfe, S. A. et al., Combining structure-based design with phage display to create new Cys2His2 zinc finger dimers. Structure. 21 June 2000. Vol. 8: 739-750. Entire Doc, especially pages 740-743.	1-14, 16-19, 21, 22-25, 27-32, 34-43, 45, 48- 61, 63-66, 68-72, 74- 79, 81-90, 92, 95 ----- 15, 20, 26, 33, 44, 46, 47, 62, 67, 73, 80, 91, 93, 94
Y	Chandrasegaran S., Chimeric Restriction Enzymes: What is Next? Biological Chemistry. July, 1999. Vol. 380: 841-848. Entire Doc, especially pages 842 and 844.	44, 46, 47, 91, 93, 94
Y	Hanes, J. et al., Comparison of Escherichia coli and rabbit reticulocyte ribosome display systems. FEBS. 1999. Vol. 450: 105-110. Entire Doc, especially pg 106.	26, 33, 73, 80



Further documents are listed in the continuation of Box C.



See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

29 April 2006 (29.04.2006)

Date of mailing of the international search report

02 JUN 2006

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Choo, Y. et al., In vivo repression by a site-specific DNA-binding protein designed against an oncogenic sequence. Nature. 15 Dec., 1994. Vol. 372: 642-645. Entire Doc, especially top of pg 643.	15, 20, 62, 67

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Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group 1, claim(s) 1-39, drawn to a method of selecting a zinc finger polypeptide that binds to a sequence of interest.

Group 2, claim(s) 40 and 42, drawn to a method of regulating the expression of a gene.

Group 3, claim(s) 41, 43 and 44, drawn to a fusion polypeptide of zinc finger polypeptide and a functional domain.

Group 4, claim(s) 20-22 and 24-31, drawn to a method of isolating a polynucleotide of a microbe that is differentially expressed under certain environmental condition.

Group 5, claim(s) 45, drawn to a method of regulating the expression of a gene using a fusion polypeptide.

Group 6, claim(s) 46, drawn to a method of altering the structure of a gene comprising contacting a fusion polypeptide.

Group 7, claim(s) 47, drawn to a method of cleaving a sequence of interest comprising a fusion polypeptide.

Group 8, claim(s) 48-86, drawn to a method of selecting a chimeric zinc finger polypeptide that binds to a sequence of interest.

Group 9, claim(s) 87, 89, and 92 drawn to a method of regulating the expression of a gene using chimeric polypeptide.

Group 10, claim(s) 88, 90 and 91, drawn to a chimeric zinc finger polypeptide.

Group 11, claim(s) 93, drawn to a method of altering the structure of a gene.

Group 12, claim(s) 94, drawn to a method of cleaving a sequence of interest.

Group 13, claim(s) 95, drawn to a position-sensitive primary library comprising zinc finger polypeptides.

The inventions listed as Groups 1-13 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The linking features of Group 1-13 are structurally and functionally different from one another. For examples, the linking feature of Group 1 is a zinc finger polypeptide; the linking feature of Group 2 is a gene of interest; the linking feature of Group 3 is a fusion polypeptide. Therefore, Groups 1-13 are not so linked by the same or a corresponding special technical feature as to form a single inventive concept. In addition, the special technical feature of Group 1 is known in the prior art. For example, Wolfe et al (Structure. Vol. 8: 739-750; 6/21/2000) teach combinatorial libraries of zinc finger proteins derived from Zif268 (see Abstract of the reference), which reads on the technical feature of Group 1. Thus, the inventions lack unity.